Koch, Kristine

From: Carl Stivers <cstivers@anchorqea.com>
Sent: Friday, February 21, 2014 5:12 PM
To: Humphrey, Chip; Koch, Kristine
Cc: James McKenna; Jennifer Woronets; Bob Wyatt; Amanda Shellenberger
Subject: FS Issue 3.3.2 DDx RALs Additional - LWG Initial Questions

Chip and Kristine -

Per our FS Revision Process Matrix, the LWG is to review EPA's 2011 RALs rationale and prepare additional questions about EPA's proposed DDx RALs to be added to Alternative B, C, and D. This email contains these initial questions (in bold) along with some context for the questions.

1. There is significant overlap between benthic risk areas, dioxin/furan, and DDE footprints and EPA's proposed DDx RAL footprints. That is, areas highlighted by the DDx RAL are adequately covered by one of these other RALs or benthic areas. We can illustrate this with maps at the 13-Mar-14 meeting, if desired. **Taken together, why don't these existing RALs and benthic risk areas adequately cover a range of active remediation footprints in the key river miles around SMA 14 considering the typical allowable accuracy for an FS level analysis?**
    a. To help support the above question and our questions below, it is useful to examine how the combined RALs (including the DDE RAL) and benthic risk areas affect river mile SWACs for DDD, DDT, and DDx (in addition to DDE).
    b. The table below shows the estimated time-zero post remediation SWACs for the various DDx compounds for each FS alternative. (Most of this information is from draft FS Appendix Fa.) Alts B, C and D all attain SWACs for the various DDx compounds that are very near or below the 10^{-5} cancer risk level in river mile 6.5-7.5. (As noted in EPA's 2011 rationale, this is the river mile with the highest DDD, DDE, and DDT concentrations.)
    c. Note we use EPA's new DDx PRGs in the table comparison below for illustration purposes, although the LWG has not yet determined whether we agree with the derivation of these new PRGs.

2. EPA has indicated that without the DDx RALs, EPA would have to indicate in the revised FS that Alternatives B, C, and D are not protective (or similar wording) for DDx. Per above, it appears the various DDx compound SWACs would be well into the protective risk range (around 10^{-5} cancer risk or less).
    a. **How does EPA arrive at the conclusion that the existing RALs would not be protective for DDx?**
    b. **How are the DDx SWACs attained any different than the fact that PCB RALs for Alternatives B through F do not attain the lowest risk ranges for smallmouth bass PRGs for every river mile?** Per the example shown in the table below, there are several river miles where none of the alternatives meet even a 10^{-4} smallmouth bass PCB PRG.
    c. **Why are PCB RALs protective but DDE RALs are not, even though the SWACs for the various DDx compounds generally attain lower risk levels within the protective range?**
    d. As discussed in the draft FS, for PCBs, additional risk reduction is expected through natural recovery over the long term after active remediation and the alternatives are expected to be protective with additional institutional controls. DDE RALs appear to achieve DDD, DDT, and DDx risk reduction within the protective range with less (or even no) reliance on natural recovery or institutional controls. **Does EPA disagree with this conclusion? If so, why?**

Table. Comparison of PRGs, Existing SWACs, and Time-Zero Post Remediation SWACs for DDx and PCBs.

Contaminant	Scenario	Exposure Area	River Mile	PRG (Cancer Risk)			Estimated Existing SWAC	Units	Estimated Time-Zero SWACs				
				10^{-4}	10^{-5}	10^{-6}			Alt B	Alt C	Alt D	Alt E	Alt F

Sum DDD	Adult SMB Consumption, Low IR	Full River Mile	6.5-7.5	900	89	8	42	µg/kg	24	18	17	5	3
Sum DDT	Adult SMB Consumption, Low IR	Full River Mile	6.5-7.5	1200	120	11	163	µg/kg	45	26	26	7	4
Sum DDE	Adult SMB Consumption, Low IR	Full River Mile	6.5-7.5	100	9	<0	17	µg/kg	10	7	6	3	2
Total DDx	EPA's new PRGs "Subsistence Fisher"	Full River Mile	6.5-7.5	800	80*	7	221	µg/kg	78	50	48	15	9
Total PCBs	Adult SMB Consumption, Low IR	Full River Mile	9.5-10.5	30	<0	<0	57	µg/kg	57	57	56	43	32

*EPA's November 2013 presentation did not present a PRG for this risk level. An estimate based on the other risk levels is shown.

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